GENERAL INDEX.

The most important classified entries will be found under Contributors, Hosts, Personals, and Reviews. New names and names of new genera, species, and varieties are printed in **bold-face type**; synonyms in *italics*.

A

A. A. A. S., Section G., Pittsburg meeting 159
Abrams, L., work of 239
Abronia, arenaria 364; **cheradophila** 364; fragrans **glaucescens** 364
Acalypha 456
Acanthospermum 456
Acer 311; rubrum 385
Acerates longifolia 389
Acleisanthes 382
Acnistus 456
Aconitum 77
Acrasieae 315
Acrasis 316
Acritochaete 76
Acrostichum 381
Actoplanes 149
Adams, C. C., work of 385
Adiantum 382
Aecidium 77, 239; *Fraxini* 6; *rubellum* 15; *Rumicis* 15
Afrardisia 148
Afrocalathea 149
Agaricus campestris, spores of 231
Agave americana, spindle formation in 243
Agrostis 239
Alabama, flora of 386
Albugo, Bliti 421; candida 420; Tragopogonis 421
Algae at Beaufort, N. C. 384
Allen, E. T., work of 466
Allionia, **glandulifera** 364; linearis 365
Allium 382; Cepa, electrical conductivity of 87
Alnus 155
Alsophila 458
Amarantus, electrical conductivity of 91
Amblyanthopsis 148
Ambrosia *tomentosa* 34
Ammophila 384, 385
Amphoranthus 311
Anderson, A. P., personal 80, 319
Andropogon virginicus 385
Anemarrhena 237
Anemia 381
Anemone, Canadensis 18; *Pennsylvanica* 18
Angiopteris, anatomy of 461; evecta 72
Annales Mycologici 467
Anogra, albicaulis 368; **Nuttallii** 368; pallida 368
Antennaria 114; *alpina* 116; *alsinoides* 117; ambigens 121; argentea **aberrans** 124; *arnoglossa* 119; *arnoglossa ambigens* 121; Brainerdii 120; *decipiens* 122; *fallax* 121; *Farwellii* 118; labradorica 116; *neglecta subcorymbosa* 118; *nemoralis* 122; neodioica 117; *neodioica attenuata* 117; *neodioica petaloidea* 118; occidentalis 123; Parlinii 119; *Parlinii ambigens* 121; *Parlinii arnoglossa* 119; petaloidea 118; *petaloidea modesta* 118; *petaloidea scariosa* 118; *plantaginea* 122; plantaginifolia 122; propinqua 120; *rupicola* 117
Antipodals, function of 244
Antrophytum 381
Apple trees, a root rot of 65
Arachniopsis, 76
Arber, personal 320, 468
Arctic plants, ecology of 69
Argemone 155; *bipinnatifida* 366; *hispida* 366
Artemisiopsis 239
Arthur, J. C. 1, 68, 78, 150, 153, 240, 457, 460; personal 319; work of 155
Aruncus astilboides 246
Arundinaria, tecta 19; Uredineae upon 1
Arzichowsky, W., work of 152
Asclepiadaceae, morphological study of 389
Asclepias, Cornuti 389; incarnata 389; obtusifolia 389; phytolaccoides 389; rubra 389; Sullivantii 389; tuberosa 389; verticillata 389; viridiflora 389
Ascocorticium 76
Asimina 387
Aspidium 382
Asplenium 382, 458; pinnatifidum, teratological 142
Aster 155
Astilbe japonica 246
Astragalus 381, 382

Athyrium 382
Atkinson, G. F. 36; work of 381
Atmospheric factors 136
Atriplex 355; acanthocarpa 356; **aptera** 356; argentea 358; *argentea* 360; canescens 356; **carnosa** 361; confertifolia 356; **cuneata** 357; eremicola 358; expansa 358; hastata 361; hymenelytra 356; lapathifolia 361; Nuttallii 357; pabularis 357; patula 361; **philonitra** 358; Powellii 359; saccaria 359; **spatiosa** 360; Suckleyana 360; **tenuissima** 359; truncata 360; Wolfii 359
Auxanometer, new form of self-registering 154
Avena sativa 153; germination of 457
Avicennia 386
Azolla, caroliniana 414; filiculoides 414; root-hairs, cap, and sheath of 414.

B

Baccharis 385
Bailey, L. H., personal 388
Banana, disease of 310
Banker, H. J., work of 381
Barbula, 76, 231
Basidiomycetes, fusion of nuclei 156
Bates, J. M., personal 159
Batis 386
Baur, E., work of 378
Beck von Mannagetta G. R., work of 309
Benson, Margaret, personal 468
Berry, E. W., 44, 426
Bessey, C. E., personal 159
Bessey, E. A., personal 467
Beta vulgaris, electrical conductivity of 85
Betula 458
Biota orientalis 250
Biotic factors 137
Blechnum 382
Bleeding 70
Boerhaavia 382
Boletus 381.
Bolley, H. L., personal 157; work of 150
Boodle, L. A., work of 72, 74
Bose, J. C., personal 468; work of 463
Botanical club, A.A.A.S., Pittsburg meeting 157
Botanical Gardens of Peradeniya 157
Bot. Soc. Amer. 319; grants of 158; Pittsburg meeting 159
Brachythecium 231
Brauneria 155
Brebner, G., work of 458
Briggs, L. J., work of 232
Britton, Mrs. E. G., personal 159; work of 311
Britton, N. L., personal 157, 159, 319; work of 239
Bromus 155; mollis 457, 460; secalinus 460; sterilis 457, 460
Bruncken, E., work of 149, 387
Bryophyllum, regeneration in 465
Bryopsis, regeneration in 465; plumosa, reproduction of thallus 377
Bryum 231
Buchenau, F., work of 149
Burkill, I. H., work of 380
Bursera 456
Buscalioni, L., work of 238
Butler, Eloise, personal 468

C

Caeoma, *Fraxinites* 6; *Fraxinatum* 6
Cakile 384
Calathea 149
Caldwell's "Laboratory Manual" 148
Camarosporium 239
Camassia esculenta 307; **Suksdorfii** 307
Campanula 312
Campbell's "University text-book" 67
Cannon, W. A., personal 159, 320
Cape Cod, vegetation of 384
Capnorea 312
Cardot, J, work of 231
Carex, zone of 131
Carya 387
Castilleia 155, 312
Cerasus demissa **melanocarpa** 25
Ceratopteris thalictroides 71
Cercis 387
Cereus 456
Cephalanthus 385
Cephalozia 76
Chaetophoraceae 458
Chamaecyparis 385
Chamberlain, C. J. 76, 145, 153, 234, 243, 244, 312; personal 159, 467
Chandler, H. P. 194
Chara 387
Characiella 76
Chenopodium 361; **cycloides** 363; **desiccatum** 362; glaucum 361; leptophyllum 362; *leptophyllum* 363; *leptophyllum subglabrum* 362; *Moquini* 363; *olidum* 362; **subglabrum** 362; succosum 361; **Watsoni** 362
Chicago flora 387
Chick, Edith, personal 468
China, plants from 457
Christ, H., work of 381
Chloris 456
Chylocladia kaliformis, cystocarp of 153
Ciboria 239
Clautriau, G., work of 151
Clark, H. W., personal 376; work of 387

Claviceps 77
Clinton, G. P., personal 320; work of 381
Clistoyucca 231
Clitocybe 381
Cockayne, L., work of 236
Cockerell, T. D. A. 453; work of 381
Cocoanut, fruit of 236
Cocos nucifera 236
Coenonia 316
Cole, Emma J., work of 387
Compositæ, zone of 131
Conandrium 148
Conocarpus 386
Convolvulus 155; tricolor, germination of 457
Contributions from the U. S. National Herbarium 157
Contributors: Arthur, J. C. 1, 68, 78, 150, 153, 240, 457, 460; Atkinson, G. F. 36; Berry, E. W. 44, 426; Chamberlain, C. J. 76, 145, 153, 234, 243, 244, 312; Chandler, H. P. 194; Cockerell, T. D. A. 453; Cook, M. T. 64; Copeland, E. B. 142, 152, 161, 260; Coulter, J. M. 68, 69, 70, 71, 75, 77, 146, 147, 148, 149, 154, 155, 231, 232, 234, 235, 236, 237, 238, 239, 310, 311, 315, 376, 381, 455, 456, 457, 458; Cowles, H. C. 309, 316, 466; Davis, B. M. 73, 152, 153, 156, 455, 461; Fairchild, D. G. 230, 451; Frye, T. C. 389; Greenman, J. M. 307; Harper, R. A. 378, 382; Harris, J. A. 314, 317; Heald, F. D. 81, 241; Hefferan, Mary 459; Howe, C. D. 149; Jeffrey, E. C. 71, 72, 74, 235, 238, 458, 461; Johnson, D. S. 321; Kraemer, H. 341; Land, W. J. G. 70, 239, 240, 249; Leavitt, R. G. 414; Livingston, B. E. 71, 73, 154, 232, 235, 236, 242, 377, 378, 379, 457, 463; Lyon, Florence M. 147, 377; MacMillan, C. 224, 313; McCallum, W. B. 93, 236; Nelson, A. 21, 355; Nelson, Elias 114; Ramaley, F. 140; Reed H. S. 125; Rehder, A. 246; Schneider, A. 109; Schrenk, H. von 65, 377; Shull, G. H. 381; Smith R. E. 231; Snow, Laetitia M. 284; Spaulding, P. 310; Stevens, F. L. 420; Whitford, H. N. 69, 149, 455, 466; Wilcox, E. M. 66; Wolfe, J. J. 72, 233; Worsdell, W. C. 216
Cook, M. T. 64; personal 157, 159, 376; work of 71, 387
Cook, O. F. personal 157
Copeland, E. B. 142, 152, 161, 260; personal 159; work of 242
Corallinae 155; from Port Renfrew 152
Cornus florida 387
Cortinarius 381
Corydalis 312
Cotton, J S., work of 381
Cotyledon, phylogeny of 458
Coulter, J. M. 68, 69, 70, 71, 75, 77, 146, 147, 148, 149, 154, 155, 231, 232, 234, 235, 236, 237, 238, 239, 310, 311, 315, 376, 381, 455, 456, 457, 458; personal 159, 319, 467
Coulter S., personal 376
Coville, F. V., personal 159, 160
Cow pea 69
Cowles H. C. 309, 316, 466; personal 159, 320; work of 387
Crataegus, **cerronis** 370; macrantha 371; Piperi 371; rivularis 370; **sheridana** 370; **Wheeleri** 369
Croton maritimus 384
Crucibulura 76
Cryptanthe 155, 312; **depressa** 29; **Howelli** 30; *multicaulis* 30
Cryptoporus 239
Ctenophrynium 149
Cucumis sativus, electrical conductivity of 90
Cucurbita pepo, germination of 457
Cucurbitaria 239
Cummings, Clara E., work of 69
Cupressus, Benthamiana 250; thyoides, diseases of 377
Cyathia 76
Cycadofilices 235
Cyclamen, regeneration in 465
Cymatella 38
Cynodontium 231
Cyperus 155
Cystopteris, regeneration in 465
Cytology, progress of 240

D

Dadoxylon Spenceri 73
Dame and Brooks' "Handbook of New England trees" 149
Danaea, development of stem 458
Dandeno, J. B., personal 319
Dangeard, P. A., work of 460
Darwin, F., work of 379
Dasya elegans, reproduction of thallus 377
Date-leaf boat 451
Datura, laevis, double fertilization in 238; Stramonium, double fertilization in 238; Tatula, double fertilization in 238
Davis, B. M. 73, 152, 153, 156, 455, 461
Davis, C. A., work of 387
DeBoissieu, H. D., work of 312
DeCandolle, C., personal 319; work of 312
Dekindtia 76
Delaware coast, ecology of 284
Delphinium, multiflorum 453; occidentale 453; **sapellonis** 453

DeToni, J. B., personal 467
Diastase, and cytological changes 236
Diatrypella 239
Dicaeoma, *Arundinariae* 18; *Distichlidis* 13; *Phragmitis* 15
Dicranum 76, 231
Dictybole 42; **texensis** 43
Dictyostelium 316; mucoroides 459
Diplazium 458
Diplophylleia, albicans 372; **apiculata** 372; obtusifolia 372; scapanioides 374; *scapanioides* 374; taxifolia 372
Diplophyllum, gymnostomophilum 374; *gymnostomophilum* 374
Dischidia, complex 314; pectenoides 314; Rafflesiana 315; with double pitchers 314
Discocalyx 148
Discocyphella 38
Discomycapsella 239
Dismal swamp, vegetation of 384
Dixon, H. H., personal 468; work of 457
Doctors of philosophy, statistics of 320
Dondia 363; *depressa erecta* 364; **erecta** 364; **Moquini** 363; **multiflora** 364; *suffrutescens* 364
Dorner, H. B., personal 376
Doryopteris 382
Double fertilization, in Solanaceae 238; Strasburger on 312
Draba, streptocarpa 366; surculifera 366; **uber** 366
Duggar, B. M., personal 319
Durand, E. J., work of 239
Duvel, J. W. T., personal 159, 320
Dyer, W. Thistleton, personal 79

E

Earle, F. S., personal 467; work of 76
Eastwood, Alice, work of 155, 239, 312; "Flora of the south fork of King's river" 146
Echinocactus 77
Edaphic factors 135
Egg, as basis of classification 313
Eggert, H., work of 239
Electrical conductivity of plant juices 81
Ellis, work of 155
Ellisia, *microcalyx* 210; *ranunculacea* 210
Elymus 77, 155, 233, 239
Encycla *purpurea* 23
Engler, A., personal 388; work of 76, 316; "Das Pflanzenreich" 148; and Drude's "Vegetation der Erde" 309; and Prantl's "Natürlichen Pflanzenfamilien" 146, 235
Enomegra 365; **bipinnatifida** 366; **hispida** 366
Entosthodon 231
Eocronartium 381
Eomycenella 36; **echinocephala** 37
Eoterfezia 38; **parasitica** 41
Eoterfeziaceae 40
Errera, L., work of 151
Erigeron 77, 233
Ericksson, J., work of 77, 153
Eriogonum 155; *aureum* 23; *aureum ambiguum* 23; *aureum glutinosum* 23; *chrysocephalum* 23; crassifolium **tectum** 23; **fruticosum** 23; fruticosum **ambiguum** 23; fruticosum **glutinosum** 23; *Kingii laxifolium* 23; **laxifolium** 23; **orendense** 21; ovalifolium **purpureum** 23; tomentosum 386
Erodium cicutarium, trichome structures of 140
Erysipheae, ecology of 382
Euglena gracilis 461
Euglenineae 460
Euphorbia 456; dulcis, polyembryony in 153
Eustace, H. J., personal 158
Euthamia graminifolia 383
Everhart, work of 155
Expansion, measurement of 154

F

Fagus 385
Fairchild, D. G., 230, 451
Farlow, W. G., work of 456
Farmer, J. B., work of 461
Fawcett, W., work of 310
Faxon, C. E., personal 388
Fedtschenko, B., work of 382
Ferguson, Margaret C., work of 231
Fernald, M. L., work of 77, 458
Ferns, anatomy of 72, 74
Fertilization of Phycomcetes 420
Festuca 239; elatior 153
Flammula 381
Flax disease 150
Florida keys 386
Forbes, H. O., work of 457
Ford, Sybille, personal 320, 468; work of 71
Forest societies in Arkansas 466
Forestry, bureau of 248, 319, 320, 388, 466
Franseria, *discolor* 34; *tomentosa* 35
Fraxinus, Americana 8; lanceolata 7; nigra 8; Pennsylvanica 8; *pubescens* 8; *sambucifolia* 8; *viride* 7
Freeman, E. M., work of 457
Freeman, W. H., personal 376
Froelichia 456; Floridana 386
Frye, T. C. 389; personal 320
Fuller, G. D., personal 319

Fungi, of Maine 146; of Tuskegee, Alabama 155
Fusarium Lini 150
Fusicladium 239

G

Gaertneria, **Grayi** 35; **tomentosa** 34
Gage, C. S., personal 320
Galapagos islands, flora of 456
Galloway, B. T., personal 160, 319
Galtonia candicans, mitosis in 234
Ganoderma 458
Gardner, Blanche, work of 239
Garrya 155
Gattinger, A., work of 386
Gentiana, *acuta strictiflora* 26; bracteosa 25; calycosa **xantha** 26; Parryi 25; **strictiflora** 26
Georgia, flora of 386
Geotropism, method of investigating 379
Geranium 70
Germination and phosphorus compounds 380
Gies, W. J., personal 79; work of 236
Gilg, E., work of 76
Gilia 155, 382; floccosa 28; **Merrillii** 27; **Wilcoxii** 27
Ginkgo, polyembryony in 64
Glacial lake, ecology of 125
Gleichenia 381, 382; pectinata 74
Gloeocephala 38
Glossophora 456
Glyceria 381
Gnaphalium, *plantaginea* 122; *plantaginifolium* 122
Goebel, K., work of 465; "Organography" 145
Golden, Katherine E., personal 376
Gramineae, zone of 131
Granularia 76
Green, J. R., personal 320, 468
Green's "Forestry in Minnesota" 455
Greene, E. L., work of 311
Greenman, J. M., 307; work of 70
Grenacheria 148
Griffiths, David, work of 77
Groom, Percy, personal 320
Guignard, L., work of 238
Guttulina 316
Guttulinopsis 316
Gymnocladus 387
Gymnoconia 77
Gymnosperms, anatomy of 154
Gymnosporangium, biseptatum 377; Ellisii 377
Gwynne-Vaughn, work of 72

H

Halàcsy's "Flora of Greece" 455
Hall, H. W., work of 77
Halopegia 149
Halsted, B. D., personal 159
Haplosporella 239
Harding, H. A., personal 157
Harper, R. A. 378, 382; work of 386
Harris, J. A. 314, 317
Harshberger, J. W., work of 377, 383, 384
Hartig, Robert, work of 69
Harvey, L. H., personal 320
Hassenkamp, A., work of 153
Hazen, T. E., work of 458
Heald, F. D. 81, 241; "Elementary Biology" 147
Heckeria, development and germination of seed 325
Hedgcock, G. G., personal 159
Hedysarum 382
Hefferan, Mary 459
Heinricher, E., work of 465
Heldreich, T. von, death of 388
Helenium 312
Helianthus 76; annuus 72; germination of 457
Helminthostachys zeylanica 72
Hemizonia 239
Hemsley, work of 457
Hennings, P., work of 155, 239
Hepaticae, Pearson's collections of 467
Heredity, and nucleolus 239
Herpophyllon 456
Herrera, A. L., work of 378
Hesperaloe 231
Hesperoyucca 231
Heydrich, F., work of 233
Hill, E. J., work of 387
Hill, T. G., work of 72, 461
Hiller, Mary F., personal 376
Hitchcock, A. S., personal 159
Hollick, A., personal 157, 159, 160; work of 381, 384
Holway, E. W. D., personal 247
Hopkins, A. D., personal 157
Hosts: Anemone, canadensis 18, pennsylvanica 18; Arundinaria tecta 19; Avena sativa 153; Bromus, mollis 457, 460, secalinus 460, sterilis 457, 460; Festuca elatior 153; Fraxinus, americana 8, lanceolata 7, nigra 8, pennsylvanica 8, pubescens 8, sambucifolia 8, viride 7; Ilex 155; Phleum, Michelii 153, pratense 153; Phragmites, communis 16, 18, Phragmites 16, 18; Rheum Rhaponticum 16; Rumex, crispus 16, obtusifolius 16; Secale cereale 153; Spartina, cynosuroides 3, 8, 11, 14, glabra 4, 8, gracilis 4, 14, patens 4, 8, polystachya 8
Hoteia *japonica* 246
Howe, C. D. 149; personal 320, 383
Howe, M. A., personal 159, 467; work of 76

Hübner, O., work of 466
Hudsonia 384
Huron river valley, ecology of 125
Hus, T., work of 72
Hydnum 381
Hydrocotyle 456
Hydrocyanic acid in Prunus 232
Hydrodynamic factors 135
Hydrophyllum 239
Hypericum 77; *Bissellii* 77
Hypnum 231
Hypodermopsis 76

I

Ikeda, T., work of 244
Ilex 155; vomitoria 384
Illosporium 239
Indiana, Greencastle 387; Winona lake 387
International catalogue 455
Intracellular karyogamy 156
Ionization of soil 241
Ishikawa, C., work of 70
Isoetes lacustris, stem anatomy of 377
Iwanow, L., work of 380

J

Jeffrey, E. C. 71, 72, 74, 235, 238, 458, 461; personal 79; work of 154
Jepson's "School flora" 376
Johnson, D. S., 321; work of 384
Jones, M. E., work of 382
Journal of Mycology 80
Juel, H. O., personal 467
Juglandaceae, embryology of 75
Jungermannia, *obtusifolia* 372; *scapanioides* 374
Justicia 456

K

Karsten, George, work of 75
Karyogamy, intracellular 155
Kaulfussia, anatomy of 461
Kearney, T. H., work of 384, 385
Kellerman, W. A., personal 80; work of 155
Kirkwood, J. E., personal 160; work of 236
Klinggraeff, H. von, death of 247
Kny, L., work of 73
Kohl, F. G., work of 154
Komarov's "Flora of Manchuria" 69
Kraemer, Henry 341; personal 159
Krug, W. H., personal 139
Kuckuck, P., work of 378
Knuth, R., work of 70
Kupfer, Miss E. M., personal 160

L

Laboulbeniaceae 146
Laguncularia 386
Lake Erie, plants of western 387
Lamarck herbarium 467
Land, W. J. G. 70, 239, 240, 249
Lapham, M. H., work of 232
Lappula 312, 381; **columbiana** 28; **cucullata** 29; heterosperma **homosperma** 29; *texana* 28
Larix leptolepis, chromosome reduction in 70
Lavauxia, *brachycarpa* 369; **Howardi** 368; priminervis 369
Lawson, A. A., personal 320
Leavitt, R. G. 414
Leimbach, G., death of 247
Lemaire, Adrien, death of 467
Lepidobotrys 76
Leptotaenia 382
Lesquerella **macrocarpa** 366
Lichens, development of apothecia 378; of Labrador 69
Light, causing change of form and structure 98
Lindsaya 72
Liquidambar 385
Liriodendron 387; evolution of 51; phylogeny of 44; Tulipifera, leaves of 44
Lisianthus 312
Livingston, B. E., 71, 73, 154, 232, 235, 236, 242, 377, 378, 379, 457, 463; personal 320; work of 387
Lloyd, F. E., personal 157, 158; work of 234, 286
Lotus, tetragonolobus, germination of 457
Louisiana, flora of 386
Lulham, R. B., work of 72
Lupinus angustifolius, seedlings of 380
Lutz, M. L., work of 235
Luze, G., work of 239
Lyon, Florence M., 147, 377; personal 320
Lyon, H. L., personal 468; work of 237, 458

M

MacDougal, D. T., personal 158, 159, 160
Macfarlane, J. M., work of 240
Macfayden, A., personal 468
MacElwee, A., work of 384
Mackenzie's "Manual" 310
MacMillan, C. 224, 313; personal 468; work of 152
Macoun's "Catalogue of Canadian plants" 376

Madia 155
Maine, fungi of 146
Makino, T., work of 155
Malvastrum, coccineum 24; *coccineum dissectum* 25; *coccineum elatum* 25; **Cockerelli** 24; **dissectum** 24; *dissectum* 24; **elatum** 25
Mamillaria 77
Marantaceae 149
Martinella *gymnostomophila* 374
Marattia, anatomy of 461
Massart, J., work of 151, 152
Matsumura, J., work of 155
Matthaei, Miss, personal 468
Maxon, W. R., personal 158; work of 458
McCallum, W. B. 93, 236; personal 160
McDonald, F. E., work of 387
Medicago denticulata, root tubercles of 237
Melanosciadum, 312
Meilotus alba, root tubercles of 109
Merrill, E. D, work of 77, 155, 239
Mez, C., work of 148
Micheli, Marc 319
Michigan flora 387; Huron valley 387; plant societies in 387
Miconia 456
Microseris, 311
Mills, W. M., work of 387
Mimosa pudica as a weed 228
Mimulus 155; alsinoides 31; Lewisii **tetonensis** 31; **membranaceus** 30
Missouri Botanical Garden, Herbarium and Library of 247
Mississippi, insular flora of 386
Mitosis in Liliaceae 234
Miyake, K., personal 319, 320, 468
Mohr, C., work of 386
Moist air causing change of form and structure 105
Molisch, H., work of 70
Mollugo 456
Monocotyledonous seedlings, vascular system in 237
Monocotyledons, development of root 238
Monophrynium 149
Monophyllanthe 149
Monotagma 149
Moore, S. L., work of 239, 311
Morgan, A. P., work of 77
Morgan, T. H., work of 464
Mori, A., death of 247
Morus 387
Mosses 76; of Alaska 231
Mount Ktaadn 383
Murrill, W. A., personal 160; work of 458
Mutchler, F., personal 376
Myrica cerifera 384
Myrmecophilous ferns 317
Myrsinaceae 148

N

Nectaropetalum 76
Neger, F. W., work of 382
Nelson, Aven 21, 355; "Key" 147
Nelson, Elias 114
Nemophila 194, 239; *alata* 206; *atomaria* 204; aurita 197; *Austinae* 207; *Brandegei* 201; breviflora 210; *Congdoni* 200; *decumbens* 212; *densa* 206; *divaricata* 211; *diversifolia* 212; *exigua* 206; exilis 211; exilis **pulchella** 214; *fallax* 212; *flaccida* 211; *glauca* 211; *gracilis* 211; *heterophylla* 201; *hispida* 211; *humifusa* 207; humulus 200; *inaequalis* 211; *inconspicua* 208, 209; *insignis* 201; *insignis atomaria* 204; *intermedia* 201; *Johnsoni* 204; *Kelloggii* 209; Kirtleyi 199; *liniflora* 201; *macrocarpa* 201; *macrophylla* 209; maculata 199; Menziesii 201; *Menziesii* 204; Menziesii **atomaria** 204; Menziesii integrifolia 205; *Menziesii minutiflora* 206; *micrantha* 209; microcalyx 210; *microcalyx* 210; *modesta* 201; *nana* 266; *nemorensis* 211; parviflora 209; *parviflora* 210; parviflora **quercifolia** 210; pedunculata 207; phacelioides 198; *Plaskettii* 209; *pratensis* 208; *pulchella* 214; *pustulata* 209; *quercifolia* 210; racemosa 198; *rotata* 205; sepulta 206; spatulata 208; *tenera* 211; *venosa* 204
New Jersey, forest 384; pine barrens and sphagnous bogs 384; strand flora 384
New Zealand plants, seedlings 236
Nicotiana rustica and Tabacum, double fertilization in 238
Nidula 76
Nidulariaceae 76
Niphobolus 382
Nomenclature, committee on 157
North America, Silva of 388
Norton J. B. S., personal 159; work of 155
Nuclear division in Euglena 461
Nucleolus and heredity 239
Nuphar, advena 71; electrical conductivity of 88; zone of 130
Nutrition causing change of form and structure 99
Nyctaginaceae 382
Nymphaea odorata 71
Nyssa 387; sylvatica 385

O

Obione *argentea* 360
Ocracoke island, vegetation of 384

Oenothera, *albicaulis* 368; *brachycarpa* 369; *Howardi* 368; humifusa 384; Johnsoni 369; *Nuttallii* 368
O'Gara, P. J., work of 311
Ohleriella 76
Olive, E. W., personal 320; work of 315
Oliver, F. W., personal 468
Olmsted, F. E., work of 466
Opulaster, *opulifolius* 367; **Ramaleyi** 367
Opuntia 456
Orcutt, C. R., work of 77
Oreocarya **cana** 30
Orthocarpus 381
Orthotrichum 231
Oscillatoria beggiatoides 152
Ostenfeld's "Flora Arctica" 147
Osterhout, W. J. V., work of 243
Overton, J. B., personal 319
Oxytheca 77, 233

P

Panicularia 155
Panicum amarum 386
Palisa, J., work of 465
Parker, H. N., work of 235
Pearson, H. H. W., work of 314
Péchoutre, F., work of 235
Peck, C. H., work of 381
Pedaliophyton 76
Peirce, G. J., personal 159; work of 237
Penicillium glaucum and amides 235
Pentstemon, *caespitosus suffruticosus* 31; comarrhenus 31; confertus 33; **Owenii** 32; procerus 33; strictus 31; suffrutescens 31; **xylus** 31
Peperomia 312, 456; germination of seeds 329; pellucida 329
Periconia 76
Perkins, Janet, work of 312
Peronospora parasitica 422
Personals: Anderson, A. P. 80, 319; Arber, 320, 468; Arthur, J. C. 319; Bailey, L. H. 388; Bates, J. M. 159; Benson, Margaret 468; Bessey, C. E. 159; Bessey, E. A. 467; Bolley, H. L. 157; Bose, J. C. 468; Britton, Mrs. E. G. 159; Britton, N. L. 157, 159, 319; Butler, Eloise 468; Cannon, W. A. 159, 320; Chamberlain, C. J. 159, 467; Chick, Edith 468; Clark, H. W. 376; Clinton, G. P. 320; Cook, M. T. 157, 159, 376; Cook, O. F. 157; Copeland, E. B. 159; Coulter, J. M. 159, 319, 467; Coulter, S. 376; Coville, F. V. 159, 160; Cowles, H. C. 159, 320; Dandeno, J. B. 319; De Candolle, C. 319; De Toni, J. B. 467; Dixon, H. H. 468; Dorner, H. B. 376; Duggar, B. M. 319; Duvel, J. W. T. 159, 320; Dyer, W. Thistleton 79; Earle, F. S. 467; Engler, A. 388; Eustace, H. J. 158; Faxon, C. E. 388; Ford, Sybille 320, 468; Freeman, W. H. 376; Frye, T. C. 320; Fuller, G. D. 319; Gage, C. S. 320; Galloway, B. T. 160, 319; Gies, W. J. 79; Golden Katherine E. 376; Green, J. R. 320, 468; Groom, P. 320; Halsted, B. D. 159; Harding, H. A. 157; Harvey, L. H. 320; Hedgcock, G. G. 159; Heldreich, T. von 388; Hiller, Mary F. 376; Hitchcock, A. S. 159; Hollick, A. 157, 159, 160; Holway, E. W. D. 247; Hopkins, A. D. 157; Howe, C. D. 320; Howe, M. A. 159, 467; Jeffrey, E. C. 79; Juel, H. O. 467; Kellerman, W. A. 80; Kirkwood, J. E. 160; Klinggraeff, H. von 247; Kraemer, H. 159; Krug, W. H. 319; Kupfer, Miss E. M. 160; Lawson, A. A. 320; Leimbach, G. 247; Lemaire, A. 467; Livingston, B. E. 320; Lloyd, F. E. 157, 158; Lyon, Florence M. 320; Lyon, H. L. 468; MacDougal, D. T. 158, 159, 160; Macfayden, A. 468; MacMillan, C. 468; Matthaei, Miss 468; Maxon, W. R. 158; McCallum, W. B. 160; Micheli, M. 319; Miyake, K. 319, 320, 468; Mori, A. 247; Murrill, W. A. 160; Mutchler, F. 376; Norton, J. B. S. 159; Olive, E. W. 320; Oliver, F. W. 468; Overton, J. B. 319; Peirce, G. J. 159, 319; Pollard, C. L. 157, 159; Pond, R. H. 320; Praeger, L. 468; Preston, C. E. 320; Pringle, C. G. 79, 157; Ramaley, F. 468; Rane, F. W. 159; Rendle, A. B. 467; Rennert, Miss R. J. 160; Rose, J. N. 319; Rothert, W. 467; Rowland, S. 468; Rydberg, P. A. 160; Sargent, C. S. 79, 388; Schrenk, H. von 157, 159, 160; Scott, D. H. 79; Selby, A. D. 158, 159; Setchell, W. A. 232; Seward, A. C. 320, 468; Shafer, J. A. 158; Shear, C. L. 157, 158, 159; Snow, Laetitia M. 79; Schmid, B. 247; Stevens, F. L. 79, 157, 158, 159, 160; Stevens, W. C. 319; Stewart, F. C. 157, 158; Stewart, F. L. 159; Stuart, W. 247, 376; Sydow, H. 247, 467; Sydow, P. 247; Thomas, M. B. 377; Thornber, J. J. 160; Tilden, Josephine E. 468; Torrey, J. 160; Trelease, W. 160; Treub, M. 79; True, R. H. 160; Underwood, L. M. 160; Vries, H. de 319; Wager, H. 320, 468; Walker, Mrs. S. B. 79; Weiss, F. E. 388; Whetzel, H. H. 377; White, Miss V. S. 160; Whitford, H. N. 320; Wiesner, J. 319; Wilcox, E. M. 159; Willis, J. C. 247, 320, 468; Woods, A. F. 158, 160;

Wright, E. P. 388; Wright, H. 320, 468; Yendo, K. 468; Youse, Lucy 377; Zelemy, C. 160
Pertusaria communis, development of apothecia 379
Phacelia 155, 311; **corrugata** 26
Phacelophrynium 149
Phloeoterma 458, 461
Phleum, Michelii 153; pratense 153
Phragmidium 239
Phragmites, *communis* 16, 18; Phragmites 16, 18; Uredineae upon 1
Phoradendron 456
Phosphorus compounds, transformation in 380
Phycomycetes, fertilization of 420
Phyllactinia, germination experiments, 382
Phylloglossum, prothallium of 74
Phytogeography, recent contributions to American 383
Pierce, G. J., personal 159, 319
Pieters, A. J., work of 386
Pilea 456
Pilger, R., work of 76
Pinus, Banksiana 251; echinata 466; halepensis 309; nigra 309; rigida 384; Strobus 251; taeda 385, 466
Piper 312; adunca 321; medium 321; ovule, seed and fruit of 321
Piper, C. V., work of 381
Piperaceae, development of 321
Pistaciopsis 76
Plagiothecium 231
Plankton, effect of dissolved O and CO^2 235
"Plant Breeding," new edition of 388
Plant, distribution 149; formation 316; juices, electrical conductivity of 81; societies 129, 290
Plectascineae, key to genera 41
Plectrothrix 239
Pleiostachya 149
Pleomassaria 239
Pleurococcus miniatus and amides 235
Plowman, A. B., work of 241
Poa 155
Podocarpus Makoyi, vivipary in 234
Pollard, C. L., personal 157, 159; work of 382, 386
Polyembryony, in Euphorbia dulcis 153; in Ginkgo 64
Polygonum 155
Polypodium 381, 458; carnosum 317; sinuosum 317; vulgare, teratological 143
Polyporaceae 458
Polysiphonia 71
Polysphondylium 316
Polystichum 381, 382
Polytrichum 231
Pond, R. H., personal 320
Populus, zone of 131
Porphyra 72
Portulaca, electrical conductivity of 91
Postelsia 468
Potamogeton, zone of 129
Potato tuber, experimental morphology of 242
Potentilla 77, 233
Potter, M. C., work of 240
Potts, George, work of 459
Praeger, L., personal 468
Pressure, osmotic and gas 151
Preston, C. E., personal 320
Pringle, C. G., personal 79, 157
Proc. Indiana Acad. Sci. 376
Proserpinaca palustris, stimulus causing change of form and structure 93
Protoplasm, irritability of plant 463; nature and origin of 378; of Schizophytes 152
Protostele 216
Prowazek, S., work of 466
Prunus, hydrocyanic acid in 232
Pseudocalea 239
Pseudomelasmia 155
Pseudomonas destructans 240
Pteridophytes, anatomy of 154; Cuban 458
Pterygophora californica 152
Puccinia 77, 155; Arundinariae 18; *arundinacea* 15; dispersa 457; Distichlidis 13; Fraxinata 6; glumarum 77; graminis 77, 153; *peridermiospora* 6; Phlei-pratensis 153; *Phragmitis* 15; rubella 15; **Seymouriana** 11; **simillima** 17; *sparganioides* 6
Puttemansia 155
Pyrenula nitida, development of 379

Q

Quercus, Marylandica 387; rubra 384; velutina 384

R

Ramaley, F., 140; personal 468
Rane, F. W., personal 159
Ranunculus arvensis, variation in floral organs 380
Raphanus sativus, electrical conductivity of 88
Raphidium polymorphum and amides 235
Reed, H. S. 125; work of 387
Regeneration, recent studies upon 464
Rehder, A., 246
Rehoboth beach 284
Rendle, A. B., personal 467
Rennert, Miss R. J., personal 160

Reviews: Caldwell's "Laboratory manual" 148; Campbell's "University textbook" 67; Dame and Brooks' "Handbook of New England Trees" 149; Eastwood's "Flora of the south fork of King's river" 146; Engler and Drude's "Vegetation der Erde" 309; Engler and Prantl's "Natürlichen Pflanzenfamilien" 146, 235; Goebel's "Organography" 145; Greene's "Forestry in Minnesota" 455; Halácsy's "Flora of Greece" 455; Heald's "Elementary Biology" 147; Jepson's "School flora" 376; Komarov's "Flora of Manchuria" 69; Mackenzie's "Manual" 310; Macoun's "Catalogue of Canadian plants" 376; Nelson's "Key" 147; Ostenfeld's "Flora Arctica" 147; Saccardo's "Sylloge fungorum" 68; Weisner's "Die Rohstoffe des Pflanzenreiches" 146, 231
Rhacomitrium 231
Rheum Rhaponticum 16
Rhizobia, biology of 109
Rhizobium, leguminosarum 109; mutabile 111
Rhizophora 386
Rhodophyceae, homology of tetrasporangium 233
Rhytisma 155
Riccia Campbelliana 77
Ricker, P. L., work of 146
Robinson, B. L., work of 77, 456
Robison, C. H., work of 376
Romanzoffia 311
Root, development of in monocotyledons 238
Root rot of apple trees 65
Root-tip, geotropism of 379; tubercles of Medicago denticulata 237
Rosaceae, ovule and seed of 235
Rose, J. N., personal 319
Rosenvinge, L. K., work of 71
Rothert, W., personal 467
Rowland, S., personal 468
Ruhland, W., work of 156
Rumex, crispus 16; obtusifolius 16
Rusts, of cereals 77; cultures of 457; relation of parasite and host 460; of timothy 153
Rydberg, P. A., personal 160
Rysselberghe, F. van, work of 151

S

Saccardo's "Sylloge fungorum" 68
Sadiria 148
Salicornia 385, 386
Salix, longifolia 385; zone of 131
Salsola 386
Salts, causing change of form and structure 101
Samuela 232
San Jacinto mountain, botanical survey of 233
Sap pressure 70
Sappinia 316
Sarcophrynium 149
Sargant, Ethel, work of 237
Sargent, C. S., personal 79, 388
Sassafras, notes on 426; acutilobum 438; bilobatum 435; Burpeana 442; cretaceum 444; cretaceum dentatum 448; cretaceum grossedentatum 447; cretaceum heterolobum 435; cretaceum obtusum 436; cretaceum recurvatum 438; dissectum 443; dissectum symmetricum 444; harkerianum 442; hastatum 448; Leconteanum 438; mirabile 446; Mudgei 437; obtusum 436; papillosum 446; parvifolium 434; platanoides 446; primordiale 447; progenitor 443; Selwynii 442; subintegrifolium 441
Saunders, C. F., work of 384
Scalesia 456
Scapania, *albicans taxifolia minor* 372; *gymnostomophila* 374
Schizophytes, protoplasm of 152
Schmid, B., death of 247
Schmidle, W., work of 76
Schneider, A. 109
Schniewind-Thies, J., work of 234
Schrenk, H. von 65, 377; personal 157, 159, 160
Schumann, K., work of 149
Scilla sibirica, mitosis in 234
Scleroderma 239
Sclerospora, fertilization of 420
Sclerotinia 239
Scott, D. H., personal 79; work of 73
Scribner, F. Lamson, work of 239
Scutellaria 77; *Churchilliana* 77
Secale cereale 153
Secotium 239
Seedlings 236
Seeds, classification of 224; germination of in high temperatures 457
Selby, A. D., personal 158, 159
Semiaquilegia 155
Senecio 70
Serenoa 386
Setchell, W. A., personal 232
Seward, A. C., personal 320, 468
Shafer, J. A., personal 158
Shaw, C. H., work of 383
Shear, C. L., personal 157, 158, 159; work of 239
Shrubs 388
Shull G. H. 381

Sida *dissecta* 24
Silva of North America 388
Siphonostele 458
Sitanion 239
Small, J. K., work of 76
Smith, R. E. 231
Snow, Laetitia M. 284; personal 79
Soil, ionization of 241
Soils, physics of 232
Solanum tuberosum, electrical conductivity of 86
Solenostele 217
Solms-Laubach, H. Graf zu 377
Sorosporium 77
Spalding, V. M., work of 387
Spaulding, P. 310
Spartina 77, 385; Bakeri 77; cynosuroides 3, 8, 11, 14; glabra 4, 8; gracilis 4, 14; patens 4, 8; polystachya 8; Uredineae upon 1
Sphaeropsis, malorum 311; rhoina 311
Sphagnum, zone of 131
Spindle formation in Agave americana 243
Spiraea, astilboides 246; japonica 246; *japonica* 246; salicifolia 246; Webb's study of 246
Stachyphrynium 149
Starch grain, structure of 341
Starke, J., work of 151
Stenopteris 381
Stevens, F. L. 420; personal 79, 157, 158, 159, 160
Stevens, W. C., personal 319
Stewart, F. C., personal 157, 158, 159
Stipa 77, 233; eminens Andersoni 66; *Hassei* 66
Stomata, mechanism of 242
Strasburger, E., work of 312
Streptanthus 155
Strophostyles 386
Stuart, W., personal 247, 376
Styracaceae 312
Suaeda, *depressa erecta* 364; *fruticosa multiflora* 364; *suffrutescens* 364; *Torreyana* 363
Sydow, H., personal 247, 467
Sydow, P., personal 247
Symbryon 312
Synthyris, **flavescens** 33; Ritteriana **obtusa** 34

T

Tansley, A. G., work of 72, 237
Taxodium 385, 386; distichum 386; imbricarium 386
Taylor, Miss A., work of 311
Telanthera 456
Telaranea 76
Temperature, causing change of form and structure 100
Tennessee flora 386
Tensions, influence upon cell growth 73
Tetracrium 155
Tetrardisia 148
Tetrasporangium in Rhodophyceae 233
Thaxter, R., work of 146
Thelesperma 312
Thelephora galactina, and root rot of apple trees 65
Theriot, I., work of 231
Thomas, A. P. W., work of 74
Thomas, M. B., personal 377
Thornber, J. J., personal 160
Thuja, archegonium of 252; fertilization in 255; morphological study of 249; pollen grain of 250; proembryo of 256; ventral nucleus of 253
Thuretella Shonsboei, cystocarp of 153
Tilden, Josephine E., personal 468
Tilletia 77
Tobler, F., work of 377
Torrey, J. C., personal 160; work of 236
Tracy, S. M., work of 386
Transpiration stream 161, 260; bibliography of 274
Trees and shrubs 388
Trelease, W., personal 160; work of 231
Tremellodendron 381
Treub, M., personal 79
Trichome structures of Erodium cicutarium 140
Trichostomum 231
Tricyrtis hirta 244
Trisetum 239
Tropaeolaceae 149
True, R. H., personal 160
Tsuga heterophylla 466
Tulipa Gesneriana, mitosis in 234
Turnip rot 240
Typha 385

U

Ulota 231
Ulothricaceae 458
Umbelliferae of Japan, revision of 146
Underwood, L. M., personal 160; work of 458
Uniola 385, 386; paniculata 384
United States, southeastern, as center of distribution 385
University of California 232; of Pavia, contributions from 455; of Vermont 157
Uredineae 1, 247
Uredo, *peridermiospora* 6; *Phragmitis* 15; *rubella* 15; *striola* 15
Uromyces, acuminatus 3; *Spartinae* 3
Ustilagineae 381
Ustilago 77

V

Valonia ovalis, zoospore production in 378
Vanderlinden, E., work of 151
Van Tieghem, Ph., work of 313
Variation, statistical in flowers of Ranunculus arvensis 380
Vascular system of gymnosperms and pteridophytes 154
Vascular tissue, evolution of 216
Verbena 239
Verhuellia 312
Vermont, delta plain in 383
Vernonia 312
Verschaffelt, E., work of 232
Vicia faba, seedlings of 380; cell division in root tips 239; sativa, seedlings of 380
Vigna sinensis 69
Viola 382; canadensis 311
Vittaria, elongata 311; lineata, morphology and anatomy of 311
Vivipary in Podocarpus 234
Vöchting, H., work of 242
Vries, H. de, personal 319

W

Wager, H., personal 320, 468
Walker, Mrs. S. B., personal 79
Walker prizes in Natural History 80
Ward, H. M., work of 460
Webera 231
Weiss, F. E., personal 388
Whetzel, H. H., personal 377
Whipple, G. C., work of 235
White, Miss V. S., personal 160; work of 76, 381
Whitford, H. N. 69, 149, 455, 466; personal 320; work of 387
Wiesner, J., personal 319; "Die Rohstoffe des Pflanzenreiches" 146, 231
Wilcox, E. M. 66; personal 159
Williams, E. F., work of 383
Williams, R. S., work of 76
Willis, J. C., personal 247, 320, 468
Winkler, H., work of 467
Wolfe, J. J. 72, 233
Woods, A. F., personal 158, 160
Woods Hole 319; morainal depressions near 383
Worsdell, W. C. 216
Wright, E. P., personal 388; work of 377
Wright, H., personal 320, 468
Wulff, T., work of 69

X

Xanthidium *discolor* 34

Y

Yabe, Y., work of 146
Yapp, R. H., work of 317
Yendo, K., personal 468; work of 152, 155
Youse, Lucy, personal 377; work of 387
Yucca 231
Yucceae 231

Z

Zaleski, W., work of 380
Zelemy, C., personal 160
Zimmermanniella 155
Zoospores, production of 378